

ABSTRACT OF THE DISCLOSURE

The invention primarily is directed to a medical tubing adapted for insertion into a body tissue or cavity and method of manufacturing different variations of the tubing along a length of the tubing. The tubing comprises a plurality of individual, discrete, generally ring-shaped elements arranged in series and fused or bonded together forming a continuous tubular structure. The ring-shaped elements may be formed of a thermoplastic or a thermoset material. The ring-shaped elements may include plastic rings, metallic rings, un-reinforced plastic rings and/or metal reinforced plastic rings assembled along the length of the tubular structure to provide variable flexibility and kink-resistance. The tubular structure may have a cross-section of any geometric shape and it may be bent, twisted or curved without kinking. The ring-shaped elements may have different flexural modulus. The ring-shaped elements may include a combination of flexible and rigid ring-shaped elements assembled along different portions or sections of the tubular structure. The ring-shaped elements may be metallic and may be bonded with a resilient, flexible elastomeric adhesive, wherein the ring-shaped elements may have different lengths and may be fused closer or further apart to one another depending on the characteristics of a portion or section of the tubing. In another aspect of the invention, the medical tubing may further comprise a secondary lumen and a pull wire to control the tubular structure. The ring-shaped elements may be truncated to provide a bending bias. In another aspect of the invention, the ring-shaped elements may vary in diameter and/or composition in different portions or sections of the tubular structure. In yet another aspect of the invention, some of the ring-shaped elements may be radiopaque, or the ring-shaped elements may comprise of different colors to operate as indicators along the tubular structure.